WE CLAIM:

1. A color video image projector, comprising:

a light source from which light in first, second, and third wavelength bands propagate;

a projection lens;

first, second, and third reflective liquid crystal light valves;

a plate-type transflective polarizing beam splitter receiving the first, second, and third wavelength bands, transmitting in a first polarization direction the first wavelength band toward the first light valve, and reflecting in a second polarization direction the second and third wavelength bands;

a color filter receiving the second and third wavelength bands, transmitting in the second polarization direction the second wavelength band toward the second light valve, and reflecting in the second polarization direction the third wavelength band toward the third light valve; and

the first, second, and third reflective liquid crystal light valves reflecting the respective first, second, and third wavelength bands of color video image pixels for selective projection through the projection lens depending on whether the pixels are in a dark polarization state or an illuminated polarization state.

2. The projector of claim 1, further including a spectrally selective output device disposed between the plate-type transflective polarizing beam splitter and the projection lens to align to substantially a same polarization direction the first, second, and third wavelength bands of light directed toward the projection lens.

3. The projector of claim 2, further including a light polarizing filter disposed between the spectrally selective output device and the projection lens to correct for non-ideal light transmission and reflection responses of the plate-type transflective polarizing beam splitter affecting at least one of the first, second, and third bands of light reflected by the light valves.

4. The projector of claim 2, in which the spectrally selective output device is of an optical retardation type.

5. The projector of claim 1, in which the first light valve reflects in the first polarization direction the first wavelength band of light from dark polarization state pixels and in which the reflected first polarization direction light transmits through the plate-type transflective polarizing beam splitter toward the light source.

6. The projector of claim 1, in which the first light valve reflects in the second polarization direction the first wavelength band of light from illuminated polarization state pixels and in which the reflected second polarization direction light reflects off the plate-type transflective polarizing beam splitter toward the projection lens.

7. The projector of claim 1, in which the second light valve reflects in the second polarization direction the second wavelength band of light from dark polarization state pixels and in which the reflected second polarization direction light transmits through the color filter and reflects off the plate-type transflective polarizing beam splitter toward the light source.

8. The projector of claim l, in which the second light valve reflects in the first polarization direction the second wavelength band of light from illuminated polarization state pixels and in which the reflected first polarization direction light transmits through the color filter and transmits through the plate-type transflective polarizing beam splitter toward the projection lens.

9. The projector of claim 1, in which the third light valve reflects in the second polarization direction the third wavelength band of light from dark polarization state pixels and in which the reflected second polarization direction

light reflects off the color filter and the plate-type transflective polarizing beam splitter toward the light source.

10. The projector of claim 1, in which the third light valve reflects in the first polarization direction the third wavelength band of light from illuminated polarization state pixels and in which the reflected first polarization direction light reflects off the color filter and transmits through the plate-type transflective polarizing beam splitter toward the projection lens.

11. The projector of claim 1, in which the light source polarizes to substantially the second polarization direction the first, second, and third wavelength bands of light.

12. The projector of claim 11, further including a spectrally slective input device that changes to the first polarization direction the first wavelength band of light and transmits in the second polarization direction the second and third wavelength bands of light.

13. The projector of claim 12, in which the spectrally selective input device is of an optical retardation type.

14. The projector of claim 1, further including a dichroic trim filter associated with multiple ones of the first, second, and third light valves, the dichroic trim filter reflecting selected wavelength bands of the light rays without changing their polarization direction.

15. The projector of claim 1, in which the plate-type transflective polarizing beam splitter includes at least one of a wire grid device, a multi-layer thin film device, a cholesteric polymer liquid crystal device, and a laminated polymer sheet device.

16. An optical display system, comprising:

a light source from which light in first, second, and third wavelength bands propagate;

a plate-type transflective polarizing beam splitter through which incident light in a first polarization state propagates and off from which incident light in a second polarization state propagates, the plate-type transflective polarizing beam splitter positioned to receive the light in the first, second, and third wavelength bands propagating from the light source;

first, second, and third optical display devices selectively switchable in response to control signals to provide respective first, second, and third output light beams modulated between first and second light transmission states corresponding to respective first and second polarization states of light incident thereon, the first, second, and third optical display devices constituting two members of and a nonmember of a selected pair of optical display devices;

a pleochroic filter through which incident light in a predetermined one of the first, second, and third wavelength bands propagates and off from which a different one from the predetermined one of the first, second, and third wavelength bands propagates; and

the plate-type transflective polarizing beam splitter optically associated with the pleochroic filter to direct light in different sets of the first, second, and third wavelength bands to different members of the selected pair of optical display devices to produce first and second modulated light output beams, and the plate-type transflective polarizing beam splitter not optically associated with the pleochroic filter to direct light in at least one of the first, second, and third wavelength bands to the nonmember of the selected pair of optical display devices to produce a third modulated light output beam, the first, second, and third modulated light output beams being of different wavelength bands and incident on the plate-type transflective polarizing beam splitter for delivery to optical processing elements.

17. The display system of claim 16, further comprising a spectrally selective output device through which incident light in the first, second, and third wavelength bands propagates and which imparts a change in polarization state to light in one of the first, second, and third wavelength bands, the spectrally selective output device receiving light propagating from the plate-type transflective polarizing beam splitter to change the polarization state of one of the first, second, and third modulated light output beams so that all of them propagate from the spectrally selective output device in substantially the same polarization state.

18. The display system of claim 17, further comprising a light polarizing filter cooperating with the spectrally selective output device to correct for non-ideal light transmission and reflection characteristics of the plate-type transflective polarizing beam splitter.

19. The display system of claim 17, in which the spectrally selective output device is of an optical retardation type.

20. The display system of claim 18, further comprising a spectrally selective input device through which incident light in the first, second, and third wavelength bands propagates and which imparts a change in polarization state to light in one of the first, second, and third wavelength bands, the spectrally selective input device positioned to receive and direct to the plate-type transflective polarizing beam splitter the light in the first, second, and third wavelength bands propagating in a first polarization state from the light source and imparting a change to a second polarization state of the light in one of the wavelength bands and leaving in the first polarization state the light in the other two of the first, second, and third wavelength bands.

21. The display system of claim 20, in which the change in polarization state imparted by the spectrally selective output device and the change to the second

polarization state imparted by the spectrally selective input device are made to the light in the same one of the first, second, and third wavelength bands.

22. The display system of claim 20, in which the spectrally selective input device is of an optical retardation type.

23. The display system of claim 16, in which the display system comprises a projection display and the optical processing elements include a projection lens.

24. The display system of claim 23, further comprising a light polarizing filter disposed between the spectrally selective output device and the projection lens to correct for non-ideal light transmission and reflection responses of the plate-type transflective polarizing beam splitter affecting at least one of the first, second, and third bands of light reflected by the light valves.

25. The display system of claim 16, in which the first, second, and third wavelength bands each include one of a green, a blue, and a red wavelength band.

26. The display system of claim 16, in which the first, second, and third optical display devices comprise reflective liquid crystal on silicon display devices.

27. The display system of claim 16, in which the light source produces polarized light such that the light in the first, second, and third wavelength bands propagates from the light source in substantially the second polarization state.

28. The display system of claim 16, in which the first and second polarization states are substantially orthogonal linear polarization states.

29. The display system claim 16, further including a trim filter associated with each of multiple ones of the first, second, and third optical

display devices, the trim filter receiving in a predetermined polarization state at least two of the first, second, and third wavelength bands of light and reflecting in the predetermined polarization state at least one of the first, second, and third wavelength bands of light.

30. The display system of claim 16, in which the members of the selected pair of optical display devices receive light in two sets including different groups of the first, second, and third wavelength bands of light.

31. The display system of claim 30, in which the two sets of different groups of the first, second, and third wavelength bands include no common wavelength band of light.

32. The display system of claim 16, in which the plate-type transflective polarizing beam splitter includes at least one of a wire grid device, a multi-layer thin film device, a cholesteric polymer liquid crystal device, and a laminated polymer sheet device.